



慧明光电(深圳)有限公司  
**KINDWIN**  
TECHNOLOGY (H.K.) CO. LTD.

## High Power R、G、B LED:1W

### KPTR-0814

#### FEATURES

High Flux per LED

Long lifespan (up to 100K hours)

Lambertian / Collimated Radiation Pattern

More efficiency than incandescent lamps / most halogen lamps

Low voltage DC operated

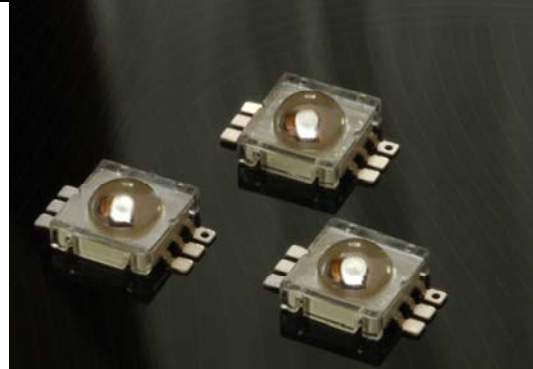
Cool beam , safe touched

Instant light (less than 100ns)

NO UV

Superior ESD protection

Soldering methods: IR reflow soldering /and hand soldering selectable



#### Applications

•Indoor and outdoor displays (e.g. traffic lights; writing lights)

•LED chips can be controlled separately to display various colors including white color

•Full color displays, RGB-Lighting

•Backlighting (LCD, switches, keys, illuminated advertising, general lighting)



Maximum Ratings Parameter	Symbol	Value			Unit
		Red	Green	Blue	
Operating Temperature Range	Top	- 40 ... + 100			° C
Storage Temperature Range	Tstg	- 40 ... + 100			° C
Junction Temperature	Tj	125			° C
Forward current ( $T_A=25\text{ }^\circ\text{C}$ )	IF	350			mA
Surge Current $T \leq 10\ \mu\text{ses}$ , $D=0.005$ , $T_A=25\text{ }^\circ\text{C}$	IF	500			mA
Reverse Voltage ( $T_A=25\text{ }^\circ\text{C}$ )	VR	5			V
Power Consumption ( $T_A=25\text{ }^\circ\text{C}$ )	Ptot	0.77	1.24	1.24	W
Thermal Resistance Soldering Point	Rth-js	9			K/W



**Characteristics( $T_A = 25\text{ }^\circ\text{C}$ )**

Characteristics( $T_A=25\text{ }^\circ\text{C}$ ) Parameter		Symbol	Value			Unit
			Red	Green	Blue	
Wavelength At Peak Emission	(typ.)	$\lambda_{\text{peak}}$	632	520	465	nm
	$I_F = 350\text{mA}$					
Dominant Wavelength	$I_F = 350\text{mA}$	$\lambda_{\text{dom}}$	625±3	528± 9	460± 6	nm
Spectral Bandwidth at 50 % $\Phi_{\text{rel max}}$	(typ.)	$\Delta\lambda$	18	33	25	nm
	$I_F= 350\text{mA}$					
50% Power Angle	(typ.)	$2\theta_{1/2}$	120	120	120	deg.
Forward voltage $I_F = 350\text{mA}$	(min.)	$V_F$	2.1	2.79	2.79	V
	(typ.)	$V_F$	2.2	3.55	3.55	V
	(max.)	$V_F$	2.5	3.99	3.99	V
Reverse current( $V_R=5\text{V}$ )	(max.)	$I_R$	50			$\mu\text{A}$
Temperature coefficient of $\lambda_{\text{peak}}$ $-10^\circ\text{C} \leq T \leq 100^\circ\text{C}$ $I_F = 350\text{mA}$	(typ.)	$TC_{\lambda_{\text{peak}}}$	0.13	0.05	0.05	nm/K
Temperature coefficient of $\lambda_{\text{dom}}$ $-10^\circ\text{C} \leq T \leq 100^\circ\text{C}$ $I_F = 350\text{mA}$	(typ.)	$TC_{\lambda_{\text{dom}}}$	0.03	0.04	0.04	nm/K
Temperature coefficient of $V_F$ $-10^\circ\text{C} \leq T \leq 100^\circ\text{C}$ $I_F = 350\text{mA}$	(typ.)	$TC_{V_F}$	-2	-2	-2	Mv/K

Individual groups on page 5



**Ordering Information**

Ordering Information Part No.	Color of Emission	Luminous Flux(Lm)		
		Red (If=350mA)	Green (If=350mA)	Blue (If=350mA)
KPTR-0814	Red	25-50		
	Green		25-50	
	Blue			7-18

**Floating Bins**

Red(I <sub>f</sub> =350mA)		
G=23...30(lm)		
	H=30...39(lm)	
		I=39...51(lm)

Floating Bins

Pure Green(I <sub>f</sub> =350mA)		
I=25...33(lm)		
	J =33...43(lm)	
		K=43... 55(lm)

Floating Bins

Blue(I <sub>f</sub> =350mA)		
D=7...9.1(lm)		
	E=9.1...11.8(lm)	
		F=11.8...16(lm)



**Wavelength Groups (Dominant Wavelength)**

Group	Red		Unit
	min	max	
1	622	627	nm

Group	Pure Green		Unit
	min	max	
3	520	525	nm
4	525	530	nm
5	530	535	nm

Group	Blue		Unit
	min	max	
3	457	462	nm
4	462	477	nm
5	467	472	nm

Group Name on Label

Example:G-1+I-3+D-3

Brightness Group (red)	Wavelength (no grouping) (red)	Brightness Group (green)	Wavelength (green)	Brightness Group (blue)	Wavelength (blue)
G	I	I	3	D	3

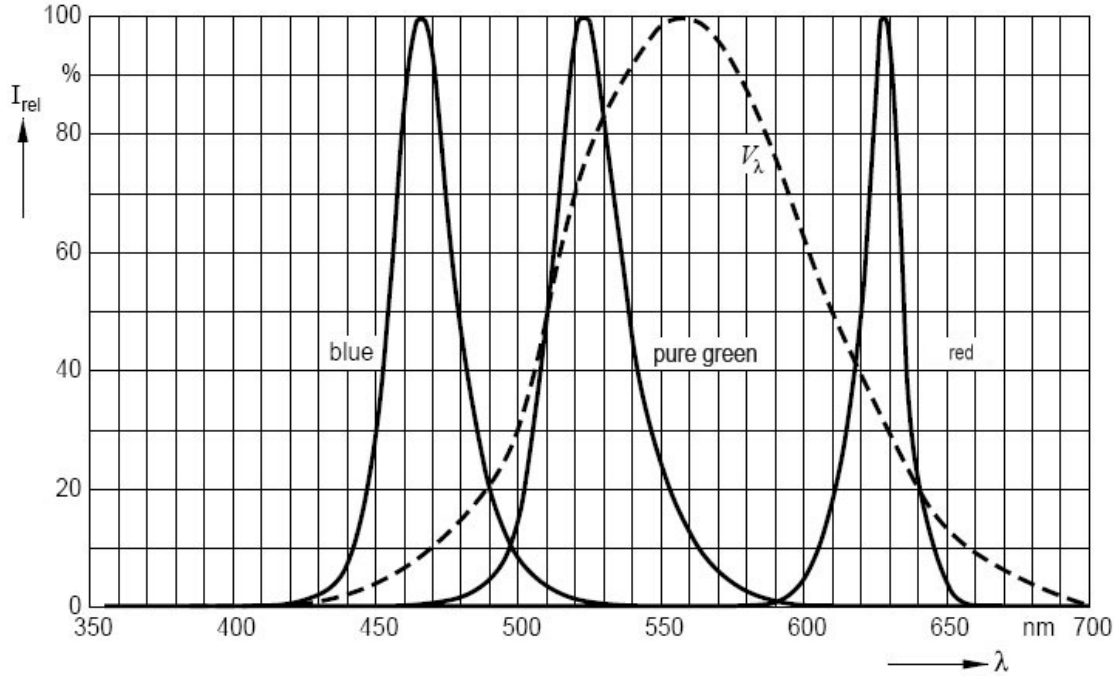
*Note: No packing unit / tape ever contains more than one brightness group per color.*



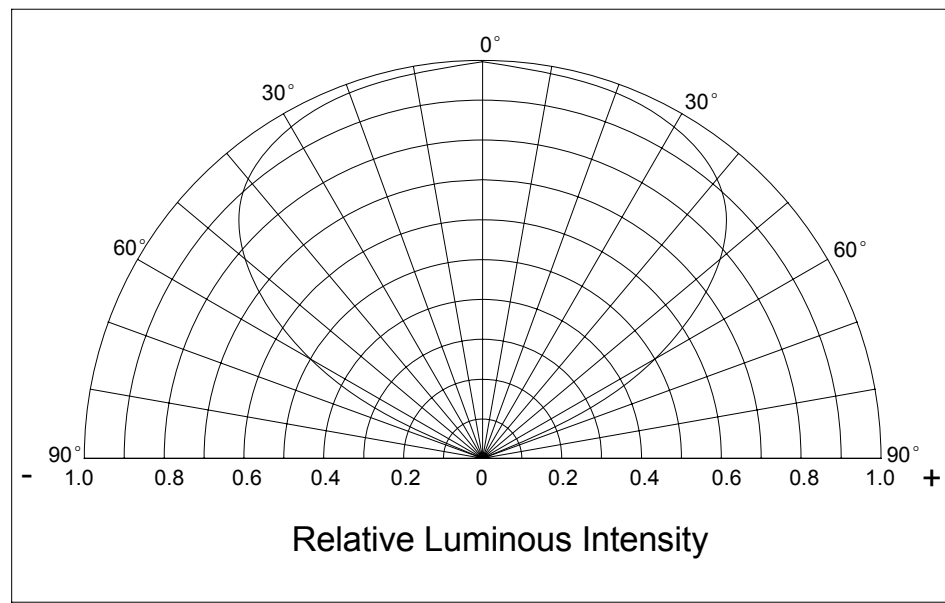
**Relative Spectral Emission**

$V(\lambda)$  = Standard eye response curve

$\Phi_{rel} = f(\lambda)$ ;  $T_A = 25\text{ }^\circ\text{C}$ ;  $I_F = 350\text{mA}$



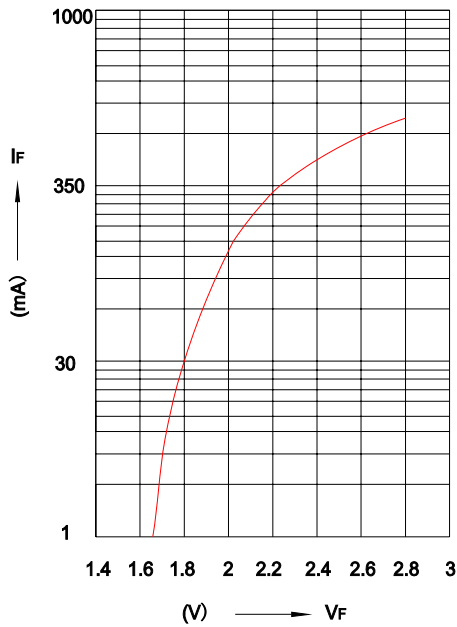
**Radiation Characteristics**





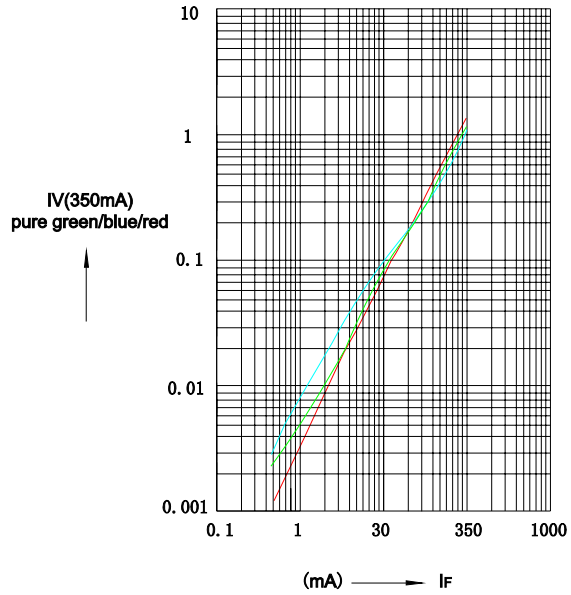
Forward Current

$T_A = 25\text{ }^\circ\text{C}$  (red)



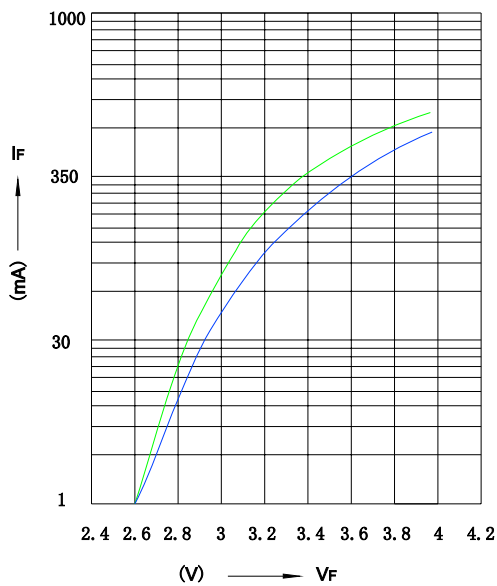
Relative Luminous Intensity

$T_A = 25\text{ }^\circ\text{C}$



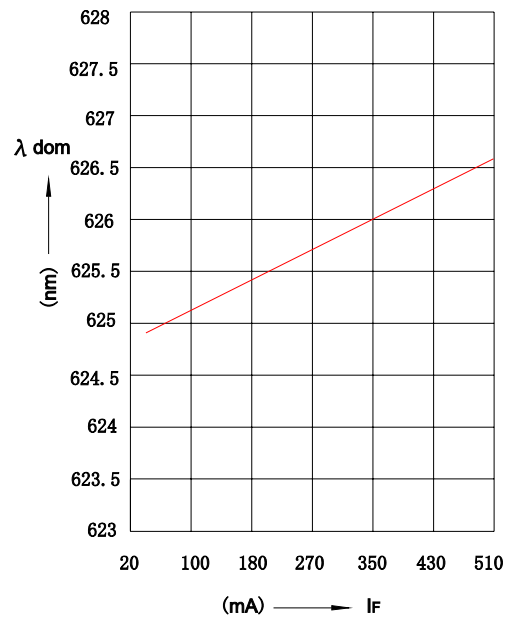
Forward Current

$T_A = 25\text{ }^\circ\text{C}$  (pure green/blue)



Dominant Wavelength

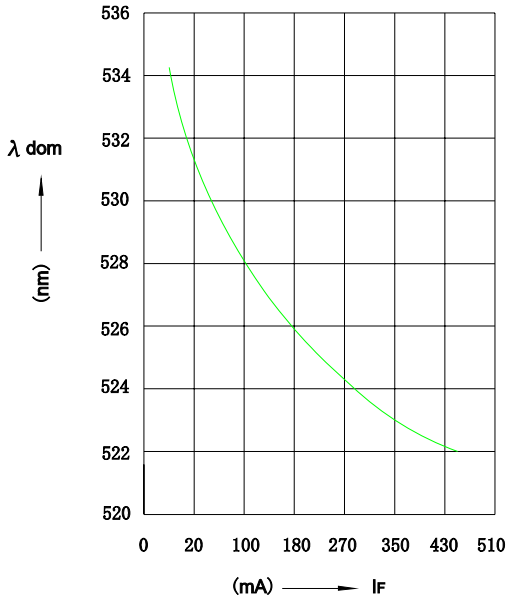
$T_A = 25\text{ }^\circ\text{C}$  (red)





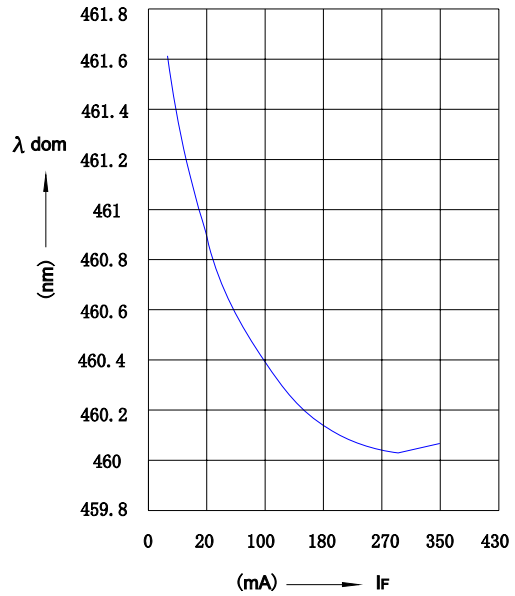
Dominant Wavelength

$T_A = 25\text{ }^\circ\text{C}$  (pure green)

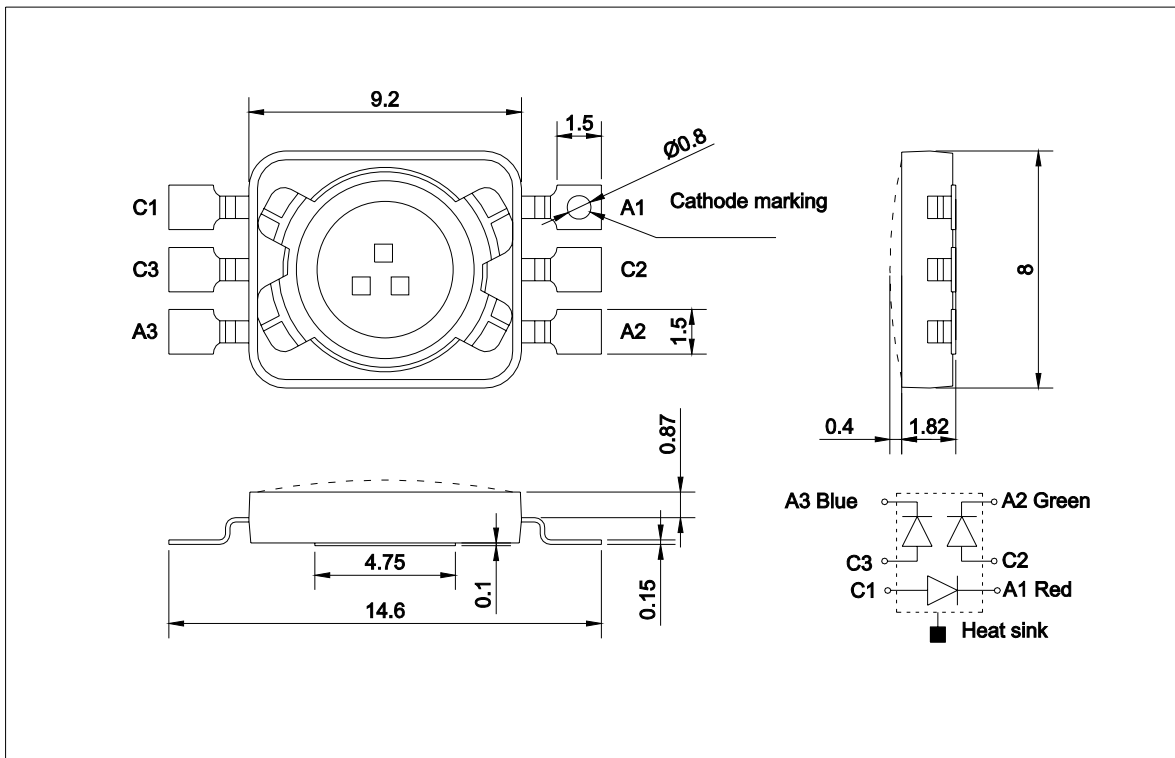


Dominant Wavelength,

$T_A = 25\text{ }^\circ\text{C}$  (blue)



**Package Outlines**





Recommended Soldering Pad8) page 16IR Reflow Soldering

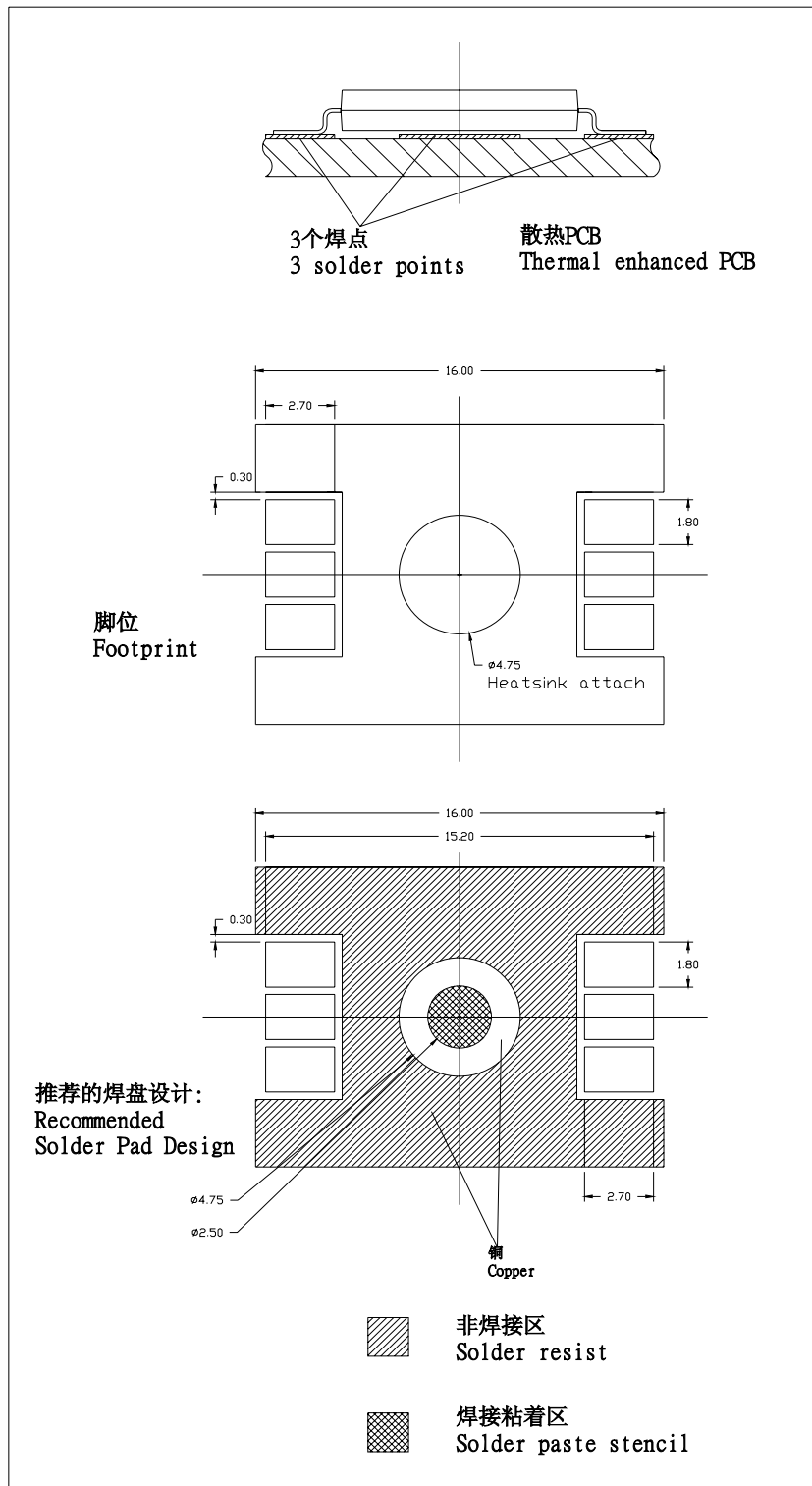
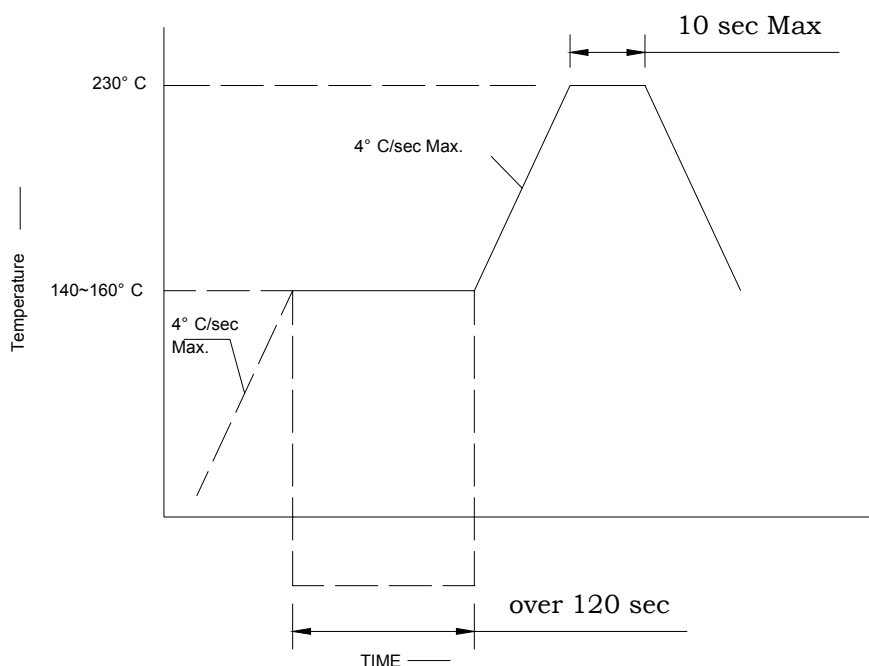




Figure 9. Recommended SnPb Reflow Soldering Profile.



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